

Title (en)

CONDUCTIVE FILM, GAS DIFFUSION LAYER FOR FUEL CELLS, CATALYST LAYER FOR FUEL CELLS, ELECTRODE FOR FUEL CELLS, MEMBRANE ELECTRODE ASSEMBLY FOR FUEL CELLS, AND FUEL CELL

Title (de)

LEITFÄHIGER FILM, GASDIFFUSIONSSCHICHT FÜR BRENNSTOFFZELLEN, KATALYSATORSCHICHT FÜR BRENNSTOFFZELLEN, ELEKTRODE FÜR BRENNSTOFFZELLEN, MEMBRANELEKTRODENANORDNUNG FÜR BRENNSTOFFZELLEN UND BRENNSTOFFZELLE

Title (fr)

PELLICULE CONDUCTRICE, COUCHE DE DIFFUSION DE GAZ POUR PILES À COMBUSTIBLE, COUCHE DE CATALYSEUR POUR PILES À COMBUSTIBLE, ÉLECTRODE POUR PILES À COMBUSTIBLE, ENSEMBLE MEMBRANE-ÉLECTRODE POUR PILES À COMBUSTIBLE ET PILE À COMBUSTIBLE

Publication

EP 3089247 B1 20190911 (EN)

Application

EP 14874497 A 20141222

Priority

- JP 2013273222 A 20131227
- JP 2014006390 W 20141222

Abstract (en)

[origin: EP3089247A1] Provided is a conductive film having excellent conductivity and gas diffusivity that is useful, for example, as a material forming a gas diffusion layer or a catalyst layer of an electrode in a fuel cell. The conductive film includes carbon nanotubes having an average diameter (\bar{A}_v) and a diameter standard deviation ($\bar{\Delta}$) satisfying a relationship $0.60 > (3\bar{\Delta}/\bar{A}_v) > 0.20$ and a conductive carbon that is different from the carbon nanotubes. A content ratio of the carbon nanotubes relative to the conductive carbon (carbon nanotubes/conductive carbon) is from 1/99 to 99/1 as a mass ratio.

IPC 8 full level

H01M 4/86 (2006.01); **H01M 4/88** (2006.01); **H01M 4/92** (2006.01); **H01M 8/0234** (2016.01); **H01M 8/0243** (2016.01)

CPC (source: EP KR US)

C01B 32/158 (2017.07 - US); **C01B 32/168** (2017.07 - US); **C09C 1/48** (2013.01 - US); **H01M 4/8605** (2013.01 - EP KR US); **H01M 4/8652** (2013.01 - EP KR US); **H01M 4/8673** (2013.01 - EP KR US); **H01M 4/8807** (2013.01 - EP US); **H01M 4/8828** (2013.01 - EP US); **H01M 4/926** (2013.01 - EP KR US); **H01M 8/0234** (2013.01 - EP KR US); **H01M 8/0243** (2013.01 - EP KR US); **H01M 8/1004** (2013.01 - US); **C01B 2202/34** (2013.01 - US); **C01B 2202/36** (2013.01 - US); **C01P 2004/51** (2013.01 - US); **C01P 2004/64** (2013.01 - US); **H01M 4/8668** (2013.01 - EP US); **Y02E 60/50** (2013.01 - EP)

Cited by

EP3279138A4; EP3157027A4; EP3053879A4; US10392254B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 3089247 A1 20161102; **EP 3089247 A4 20170719**; **EP 3089247 B1 20190911**; CN 105814721 A 20160727; CN 105814721 B 20191115; JP 6524913 B2 20190605; JP WO2015098089 A1 20170323; KR 20160102406 A 20160830; TW 201539852 A 20151016; TW I674700 B 20191011; US 2016315331 A1 20161027; US 2020274172 A1 20200827; WO 2015098089 A1 20150702

DOCDB simple family (application)

EP 14874497 A 20141222; CN 201480067821 A 20141222; JP 2014006390 W 20141222; JP 2015554561 A 20141222; KR 20167015598 A 20141222; TW 103145415 A 20141225; US 201415105128 A 20141222; US 202016871041 A 20200511